1: McGee E-5 (1894-1895) 1898 NU31 Seri NU31

133 of the water: the product of the semiannual storms suffices to form a meager supply of ground water, which is diffused in the sands and softer rocks of the plains, and concentrated in the narrow channels carved through the dense granites of the sierras; and enough of the flow passes the barriers to supply deep wells in the terminal fan, as at the frontier ranchos Libertad (abandoned) and Santa Ana, just as the subterranean seepage from the Sonora more richly supplies the deep well at San Francisco de Costa Rica. In these lower reaches the mineral salts, normally present in minute quantities, are concentrated so that the water from these wells is slightly saline, while deeper in the desert the scanty water is quite salt.

133 In Seriland proper the distribution of potable water is conditioned
312 by the meager precipitation, the local configuration (shaped largely by sheetflood erosion), and the disturbance of equilibrium of the scanty ground-water due to the tilting of the province. The most abundant permanent supply of fresh water is that of Arroyo Carrizal, which is fed by drainage and seepage from the broad and lofty mass of pervious rocks forming the southern part of Sierra Kunkaak, the abundant supply being due to the fact that the eastern tributaries are energetically retrogressing into the mass in deep gorges which effectually tap the water stored during the semiannual storms. The arroyo and valley of Agua Dulce are less favorably conditioned by reason of a trend against the tilting of the province and by reason of the narrower and lower mass of tributary rock in the northern part of the range, and the flow is impermanent, as indicated by the absence of canes and other stream plants; yet four explorers (Ugarte, 1721; Hardy, 1826; Espence, 1844; Dewey, 1875) reported fresh water, apparently in a shallow well tapping the underflow, at the embouchure of the arroyo. On the eastern slope of Sierra Kunkaak there are several arroyos which carry water for weeks or even months after the winter rains, and sometimes after those of summer; but the only permanent water—Tinaja Anita—is at the base of a stupendous cliff of exceptionally pervious and easily eroded rocks, so deeply cut that ground-water is effectually tapped, while an adjacent chasm—Arroyo Millard—is so situated that the cliff-faced spur of the sierra above the tinaja absorbs an exceptional proportion of the surface flowage from the main crest. The tinaja (figure 3) is permanent, as indicated by a canebrake some 20 by 50 feet in extent, and by a native fig and a few other trees—though the dry-season water-supply ranges from mere moisture of the rocks to a few gallons caught in rock basins within the first 50 yards of the head of the arroyo. No other permanent supplies of fresh water are known on the island, though there are a few rather persistent tinajas along the western base of Sierra Menor above Willard point.

On the mainland tract there is a cliff-bound basin, much like that of Tinaja Anita, at the head of Arroyo Mitchell and base of Johnson peak, christened Tinaja Trincheras; but the range is narrow and the rocks

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

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granitic, and hence the supply is not quite permanent.[1] A practically permanent supply of water is found in one or more pools or barrancas at the head of Playa Noriega in Desierto Encinas. The liquid lies in pools gouged by freshets in the bottoms of arroyos coming in from the northward, just where the flow is checked by the spread of the waters over the always saline playa; and, since they are modified by each freshet, they are sometimes deep, sometimes shallow, sometimes entirely sand-filled. When the barrancas are clogged, or when their contents are evaporated, coyotes, deer, horses, and vaqueros obtain water by excavating a few feet in the sand lining the larger arroyos. Commonly the barranca water is too saline for Caucasian palates save

FIG. 3—Tinaja Anita.

in dire extremity, but the salinity diminishes as the arroyos are ascended. An apparently permanent supply of saline and nitrous water is found in a 10-foot well, known as Pozo Escalante, or Agua Amarilla (yellow water), near the southern extremity of Desierto Encinas, reputed to have been excavated by Juan Bautista de Escalante in 1700, and still remaining open; its location is such that it catches the subterranean seepage from both Bacuache and Sonora rivers. The water is potable but not palatable. Among the vaqueros of San Francisco de Costa Rica there is a vague and ancient tradition of a carrizal-marked tinaja or arroyo (Aguaje Parilla) at the eastern base of the southern portion of Sierra Seri; and both vaqueros and Indians

[1] Tinaja Trinchera was entirely dry and without trace of carrizal in December, 1894.

1:McGee E-5 (1894-1895)1898 NU31 Seri NU31

133 refer to one or more saline barrancas about the western base of the
312 same semirange, probably in Arroyo Mariana.

In brief, Arroyo Carrizal, Tinaja Anita, and Pozo Escalante are the only permanent waters, and Pozo Hardy, Barranca Salina, and Tinaja Trinchera the only subpermanent waters actually known to Caucasians in all Seriland, though it seems probable that permanent water may exist at Aguaje Parilla and in Arroyo Mariana, and impermanent supplies near Bahia Espence. There may be one or two additional places of practically permanent water in smaller quantity, and a few other places in which saline water might be found either at the surface or by slight excavation, and which may be approximately located by inspection of the map under guidance of the principles set forth in the preceding paragraphs; but this would seem to be the limit of trustworthy water supply. During the humid seasons the waters are naturally multiplied, yet it is improbable that any of the arroyos except Carrizal and Agua Dulce and a few minor gulches along the more precipitous shores shed water into the gulf save at times of extraordinary local flood.[1]

133 The geologic structure of the Sonoran province is complex and not well understood. So far as the meager observations indicate, the basal rocks are granites, frequently massive and sometimes schistose, sometimes intersected by veins of quartz, etc. The granitic mass is upthrust to form the nuclei of Sierra Madre and other considerable ranges; it also approaches the surface over large areas of plains. Resting unconformably on the granites lie heavy deposits of shales and limestones, commonly more or less metamorphosed; these rocks outcrop on the slopes of most of the main ranges and form the entire visible mass of some of the lower sierras and buttes, while they, too, sometimes approach the surface of the sheetflood-carved plain. The rocks, both calcareous and argillaceous, combine the characters of the vast Mesozoic limestone deposits of eastern Mexico and the immense shale accumulations of corresponding age in California, and hence probably represent the later half of the Mesozoic. This is the only sedimentary series recognized in the province. Both the granites and the sedimentary beds are occasionally overlain by volcanic deposits, chiefly in the form of much-eroded lava-sheets and associated tuff-beds, which sometimes form considerable ranges and buttes (notably Sierra Kunkaak, of Isla Tiburon); these remnantal volcanic deposits are probably late Mesozoic or early Tertiary. Newer volcanics occur locally, forming mesas, as about Agua Nueva (40 miles northwest of Hermosillo), or even coulees apparently filling barrancas of modern aspect, as in the vicinity of Bacuachita,[2] or rising into cinder cones surrounded by

113 [1] The physiographic features of the Sonoran province in general are treated in greater detail in a paper on Sheetflood Erosion, Bull. Geol. Soc. Am., vol. VIII, 1897, pp. 87-112, and in a paper on Papagueria, Nat. Geog. Mag., vol. IX, 1898, pp. 365-371; while certain local features are described in a paper on Seriland, prepared jointly with Willard D. Johnson, Nat. Geog. Mag., vol. VII, 1896, pp. 125-133. The aggregate available fresh water of Seriland is estimated on p. 121.

[2] Noted by Willard D. Johnson.

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

133 fortable haven at high tide, it is mostly mud-flat and sand-waste at extreme low tide—a condition which explains the stranding of an 80-foot whale in this treacherous harbor about 1887. The rada is between two and three miles in length. It abounds in marine life of
136 kinds preferring quieter waters: clams are plentiful in its mud-flats, a sponge lines portions of the bottom toward its inner extremity, oysters cluster numerously on bowlders and on the mangrove-like roots and trunks of a large shrub along the outer shore, and various fishes find refuge here from the fierce currents and the hungry sharks and porpoises of the open strait; these and other creatures form food for innumerable waders and other water-fowl that seek shelter in the quiet bay, which is still further protected by salt-enduring shrubbery on the bars of the point and by the shrubby thickets and wave-cast banks and wind built dunes on the mainland side.

The combination of conditions renders this portion of the Tiburon
361 coast the optimum habitat of the Seri Indians. There are, indeed, no houses or other traces of permanent habitation on Punta Tormenta itself, which is not only swept by gales but must sometimes be inundated by gale-driven waters at high spring tide; but at the inner end of the long sand-spit, and also on the mainland opposite the outer portion of Rada Balleua, there are extensive and well-kept rancherias, capacious enough to accommodate comfortably thirty or forty Seri families, i. e., 150 or 200 persons. Toward its landward end the sand-spit is built
311 largely of pebbles and cobbles, of which thousands of tons are adapted to industrial use; sea-food is practically unlimited and is readily taken; water-fowl literally crowd the protected rada within arrow-shot of natural cover; the outer slope of the bar is admirably suited for landing and embarking balsas in calm weather, while the bay is an ideal harbor for the portable craft, and the shrub-grown shores give unlimited opportunity for concealing them when not in use; the dunes and banks are high enough to protect the low jacales from storm-winds, while the abundant sponges and turtle-shells afford material for thatching and shingling the more exposed walls and roofs; and finally,
[312] it is but a favorite distance (about 4 miles) to the permanent fresh water of Tinaja Anita. From this Seri metropolis well-trod trails
487 radiate toward all other parts of the island; the best beaten leads to the tinaja, sending branches into all the neighboring gorges, in which game is sometimes taken; next best-worn is the trail laid across Sierra Kunkaak to strike Arroyo Carrizal mid-length of its permanently wet portion; others pass northward to rancherias at different points on the coast, and still another skirts the coast southward by several smaller rancherias to the considerable jacal collection near Punta Narragansett—this, like other longshore routes, having alternative trails, the evanescent fair-weather one following the beach, while the permanent path threads the thorn-set thickets marking the crest of the sea-cliff or cuts across the longer salients. The Narragansett rancheria is

1: McGee E-S (1894-1895)1898 NU31 Seri NU31

142 Amerindian[1] average; the feet are set straight in walking, as befits the pedestrian habit; the arms are not elongated, and the thighs seem no [144] longer in proportion to other elements of the stature than are those of the highest human types. In like manner the bodies are notably free from artificial deformation; the skulls are not flattened or otherwise [304] distorted; there is no scarification, or even tattooing; neither ears nor lips are pierced for pendants or labrets; the teeth are not filed or drilled, though in some cases at least the first incisors of females are extracted; and while there are trustworthy records of the piercing of the nasal septum for the insertion of pendants, no examples were found at Costa Rica in 1894. The food habits and other customs of the tribe indicate, or at least suggest, more or less specialized and perhaps distinctive internal characters; but, without actual examination of the organs, these inferred characters demand little more than passing notice.

On reviewing the more prominent somatic characters of the Seri, it is found that the greater number are either functional or presumptively correlated with function, and that only a few—chiefly stature and color—are simply structural; accordingly a comparison of the peculiar somatic features and the peculiar individual habits of the tribe would seem to be instructive in more than ordinary degree.

361 The most striking trait of the Seri is the pedestrian habit. The warriors and women and children alike are habitual rovers; their jacales and even their largest rancherias are only temporary domiciles, evidently vacant oftener than occupied; the principal rancherias are separated by a hard day's journey or more; and none of the known ● [312] rancherias or jacales of more persistent use are nearer than 4 to 10 miles from the fresh water by which their occupants are supplied. Probably the most persistently occupied rancherias of the last half century have been those located from time to time near Costa Rica, yet even these were seldom occupied by the same group for more than a fortnight or possibly a month, and were often vacated within a day or two after erection. Still more temporary camps intervene between jacales, and their sites may be seen in numbers in the neighborhood of the better-beaten paths, or along the shores, or even over the trackless spall-strewn plains; they may be merely trampled spots, sparsely strewn with oyster shells and large bones gnawed at the ends, usually in the lee of a shrub or rock; in places of small shrubbery or exceptionally abundant grass there may be two or three or perhaps half a dozen "forms" (suggesting the temporary resting places of rabbits), in which robust bodies nestled and shrugged themselves into the warm earth and under the meager vegetation. Rarely there are ashes and cinders hard by, to mark the site of a tiny fire, and more frequently battered and stained or greasy bowlders record their own use as meat-

[1] The term *Amerind* (with the self-explanatory notations *Amerindian*, *Amerindic*, etc.) has been established by the Anthropological Society of Washington as a convenient collective designation for the aboriginal American tribes (American Anthropologist, new series, vol. 1, 1899, p. 562).

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

blocks or metates, though it is manifest that most of the camps were fireless and many foodless. It is particularly noteworthy that even the more temporary resting-places are seldom if ever less than a mile or two from the nearest fresh water. In short, the Seri are not a domiciliary folk, but rather homeless wanderers, customarily roving from place to place, frequently if not commonly sleeping where overtaken by exhaustion or storm, ordinarily slumbering through a part of the day and watching by night, habitually avoiding fresh waters save in hurried and stealthy visits, and apparently gathering in their flimsy huts only on special occasions.

In conformity with their rovinguess the Seri are notable burden-bearers. They habitually carry their entire stock of personal belongings (arms, implements, utensils, and bedding), as well as their stock of food and—weightiest burden of all—the water requisite for prolonged sustenance amid scorching deserts, in all their wanderings, the water being borne chiefly by women, in ollas, either balanced on the head singly or slung in pairs on rude yokes like those of Chinese coolies. And they have never grasped the idea of imposing their burdens on their bestial associates; their coyote-curs are not harnessed or even led; when they surround and capture horses, burros, and kine they make no use of ropes, never think of mounting even when pursued by vaqueros, but immediately break the necks or club out the brains of the beasts, perchance to tear the writhing body into quarters and flee for their lives with the reeking flesh still quivering on their sturdy heads and brawny shoulders—and scores of vaqueros agree in the affirmation (wholly incredible as it would be if supported by fewer witnesses) that even when so burdened the Seri skim the sand wastes of Desierto Encinas more rapidly than avenging horsemen can follow.

The hardly conceivable fleetness of the Seri is conformable with their habitual rovinguess and their ability as burden-bearers; and this faculty is established by cumulative evidence so voluminous and consistent as to outweigh the presumption arising from the standards attained among other peoples. A few minutes after they were photographed, the group of boys shown in plate XVI, with several others of about the same size, provided themselves with a stock of their favorite human-hair cords, "rounded up" a dozen mongrel coyote-dogs haunting the rancheria at Costa Rica, and herded the unwilling animals toward a shrubbery-free space a quarter of a mile away, in order to rope them in imitation of the work of the Mexican cowboys earlier in the morning. From time to time as they went a frightened cur sneaked or broke through the cordon of boys, and made for distant shrub-tufts at top speed; yet in every case a boy darted from the ring, headed off the animal within one or two hundred yards, and lashed it back to its place. On arriving at their miniature rodeo the boys widened their ring, and at a signal scattered and frightened the dogs; then, when the fleeing animals had a fair start, each selected his victim and fol-

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

147 do swift stroke and strong grasp and dexterous digitation, are mainly
182 such as urge manual development more strenuously than would be normal among tribesmen connected with their environment through the medium of tools. The demand for manual strength and skill is intensified among the Seri by both natural and domestic conditions; the ever-ready (and almost the sole) material suitable for simple adjunct to the hand abounds in the form of wave-worn cobbles; these cobbles are easily usable in such wise as to serve all ordinary purposes, and their abundance discourages the production of more highly differentiated tools; while their habitual use promotes manual strength and deftness, coupled with that digital freedom (required, for example, in grasping a ball) which most clearly distinguishes the human hand from the subhuman paw. Conjoined with these natural conditions are domestic demands tending to cultivate manual fitness and eliminate the manually unfit; for, in addition to the direct industrial premium on dexterity, through which the dexterous survive while the clumsy starve, there is a special premium growing out of the marriage custom, through which
[143] only the manually efficient (and at the same time morally acceptable) are put in the way of leaving lines of descendants.[1] Naturally, in view of the combination of factors, all traceable directly or indirectly to environmental conditions, the Seri afford a peculiarly striking example of cheirization extended to an entire tribe (if not to a genetic stock of people)—indeed the remarkably developed Seri hands and feet first suggested the importance of this process of human development and led to its formal characterization.

Accordingly, the robust-bodied and slender-limbed yet big-fisted and
143 big-footed Seri seem to be adjusted, so far as several of their more
182 striking somatic characters are concerned, to distinctive habits themselves reflecting a distinctive habitat; and the coincidences appear to reveal and establish the law of interaction between the human organism and its environment—an interaction effected through the habits and hence through the normal functioning of the individual organisms as constrained through their collective relations. And recognition of the
147 law of interaction opens the way to consideration of other correspond-
143 ences between structures and functions and environing conditions.
182 Conspicuous among the more strictly functional traits of the Seri is
● 312 the intensity of action characteristic especially of the warriors, though in less degree of the entire tribe—an intensity made all the more striking by contrast with the extreme inertness between streams. Manifestly the capacity for concentrated effort is in harmony with the tribal habits, themselves reflecting habitat. The resource of prime importance in Seriland—that which directly and constantly conditions the very existence of human inhabitants—is potable water. This prime source of life is too heavy to be transported and too unstable to be stored with the facilities of primitive culture, yet it is always within reach of an organism strong enough to journey ten or twenty or fifty

[1] The marital customs of the tribe are described [illegible], pp. 150-161.

1: McGee E-5 (1894-1895)1893 NU31 Seri NU31

miles in search of it, and acute enough to follow trails and indications. Naturally the meager water-supply serves as a mechanism for sorting out and preserving the strong and the acute, and for eliminating the weakly and the dull; and hence the tribe have developed a faculty, or perhaps a potentiality, of distinctive sort—the potentiality of providing against thirst-death by a reserve power in the organism itself rather than in the form of mechanical devices such as characterize higher culture. Quite similar are the relations to the resource of second importance, i. e., ordinary food. Habituated to dispensing with storage and transportation of their primary resource, and accustomed to finding food whenever forced to sufficiently active effort to obtain it, the Seri have never grasped that first principle of thrift expressed in the accumulation of food supplies; and accordingly they intuitively rely on successful fishing or chase or search of vegetal edibles for sustenance, and habitually delay effort until they are stirred into activity by the pangs of hunger. Naturally this improvidence serves as another mechanism for perpetuating families of stored vitality, and especially those able to prevail over swift or strong or cunning quarry by sustained vigor and alertness after prolonged deprivation; and the effect of this mechanism, too, is to develop a reserve power in the organism itself, in lieu of the material reserve made through thrift in higher culture. Similar in their consequences are the relations of the individual organisms to the third industry of Seriland, i. e., navigation of the gale-swept and tide-troubled waters. Even the buoyant balsa can not weather the williwaws or ride the tideripa of El Infiernillo without exercise of the utmost strength and skill on the part of the navigators; while the often persistent storms may delay for days embarkation on voyages in quest of fresh water or food. Naturally, the frequent delays and not infrequent perils of such navigation constitute a mechanism for selecting navigators possessed of reserve powers adequate to meet desperate emergencies with vigor and judgment even after enervating waits for wind and tide, while those not so well endowed are either brought up to standard in their hard training school or expelled from their class by drowning or dashing on the rocks, as may happen; so that the effect of this mechanism also is to preserve individuals and perpetuate generations characterized by reserve power, and hence to develop latent potentiality in the tribe. Now, the normal product of these and other natural mechanisms immediately reflecting environmental conditions is capacity for sports, or for intense functioning under severe stress, despite accentuation of the stress by thirst or hunger or exhaustion, or by all combined—i. e., the effect of habitat and habit is to produce precisely such a somatic regimen as that so conspicuously displayed by the Seri folk. So the intensified activity with long intervals of inertness, simulating the habits of carnivorous and some other lower animals, and hence suggesting primitive condition, would appear to be largely a phylogenetically acquired character expressing specific adjustment to environment.

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

INDUSTRIES AND INDUSTRIAL PRODUCTS

105 The pacific vocations of the Seri are few. They are totally without agriculture, and even devoid of agricultural sense, though they consume certain fruits and seeds in season; they are without domestic animals, though they live in cotoleration with half-wild dogs, and perhaps with pelicans; and they are without commerce, save that primitive and inimical interchange commonly classed as pillage and robbery. Accordingly, their pacific industries are limited to those connected with (1) sustentation, chiefly by means of fishing and the chase; (2) navigation and carrying, (3) house-building, (4) apparelling, and (5) manufacturing their simple implements and utensils; and these constructive industries are balanced and conditioned by the destructive avocation of (6) nearly continuous warfare.

FOOD AND FOOD-GETTING

● 312 The primary resource of Seriland is raised to the first place in realized importance only by its rarity, viz, potable water—a commodity so abundant in most regions as to divert conscious attention from its paramount role in physiologic function as well as in industrial economy. The overwhelming importance of this food-source is worthy of closer attention than it usually receives. Classed by function, human foods are (1) nutrients, including animal and vegetal substances which are largely assimilated and absorbed into the system; (2) assimilants, including condiments, etc, which promote alimentation and apparently aid metabolism; (3) paratriptics, or waste preventers, including alcohol and other stimulants, which in some little-understood way retard the waste of tissue and consequent dissipation of vital energy; and (4) diluents, which modify the consistency of solid foods and thereby facilitate assimilation, besides maintaining the water of the system. Classed by chemic constitution, the foods may be divided into (1) proteids, or nitrogenous substances, including the more complex animal and vegetal compounds; (2) fats, or nonnitrogenous substances in which the ratio of hydrogen and oxygen is unlike that of water, and which are second in complexity among animal and vegetal compounds; (3) carbohydrates, or nonnitrogenous compounds of carbon with hydrogen and oxygen in the proportions required to form water, which are among the simpler vegetal and animal compounds; and (4) minerals, chiefly water, with relatively minute quantities of various salts. Both classifications are somewhat indefinite, largely because most articles of food combine two or more of the classes; yet they are useful in that they indicate the high place of the simple mineral water among food substances. Quantitatively this constituent stands far in the lead among foods; the human adult consumes a daily mean of about 4½ pounds of simple liquids and 2½ pounds of nominally solid, but actually more than half watery, food; so that the

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

average man daily ingests nearly 6 pounds of water and but little over 1 pound of actually solid nutrients. Thus the ratio of the consumption of liquid food to that of solids is (naturally, in view of that readier elimination of the liquid constituent so characteristic especially of arid regions) somewhat larger than the ratio of water to solids in the human system, the ratios being nearly 6:1 and 4:1, respectively.[1] This analysis serves measurably to explain the peculiarly developed water-sense of all desert peoples, a sense finding expression in the first tenets of faith among the Pueblos, in the fundamental law of the Papago, and in the strongest instinct of the Seri; for among folk habituated to thirst through terrible (albeit occasional) experience, water is the central nucleus of thought about which all other ideas revolve in appropriate orbits—it is an ultimate standard of things incomparably more stable and exalted than the gold of civilized commerce, the constantly remembered basis of life itself.

The potable water of Seriland is scanty in the extreme. The aggregate daily quantity available during ten months of the average year (excluding the eight wettest weeks of the two moist seasons) can hardly exceed 0.1 or 0.2 of a second-foot, or 60,000 to 125,000 gallons per day, of living water, i. e., less than the mean supply for each thousand residents of a modern city, or about that consumed in a single hotel or apartment house. Probably two-thirds of this meager supply is confined to a single rivulet (Arroyo Carrizal) in the interior of Tiburon, far from the food-yielding coasts, while the remainder is distributed over the 1,500 square miles of Seriland in a few widely separated aguajes, of which only two or three can be considered permanent; and this normal supply is supplemented by the brackish seepage in storm-cut runnels, as at Barranca Salina, or in shallow wells, as at Pozo Escalante and Pozo Hardy, which is fairly fresh and abundant for a few weeks after each moist season, but bitterly briny if not entirely gone before the beginning of the next. The scanty aggregate serves not only for the human but for the bestial residents of the Seri principality; and its distribution is such that the mean distance to the nearest aguaje throughout the entire region is 8 or 10 miles, while the extreme distances are thrice greater.

The paucity of potable water and the remoteness of its sources naturally affect the habits of the folk; and the effect is intensified by a curious custom, not fully understood, though doubtless connected with militant instincts fixed (like the habits of primitive men generally) by abounding faith and persistent ritualistic practice—i. e., the avoidance of living waters in selecting sites for habitations or even temporary camps. Thus the principal rancherias on Tiburon island, about Bahia Ballena, are some 4 miles from Tinaja Anita, the nearest aguaje; the

[1] The place of water among food substances is more fully discussed in The Potable Waters of Eastern United States, 14th Ann. Rpt. of the U. S. Geol. Survey, 1894, pp. 5-6; the physiologic consequences of deprivation of water are outlined in The Thirst of the Desert, Atlantic Monthly, April 1898, pp. 483-489.

1: McGee E-5 (1894-1895)1898 NU31 Seri NU31

312 361 extensive rancherias near Punta Narraganzett measure 10 miles by trail from the same aguaje; the half dozen jacales about Campo Navidad are separated by some 15 miles of stony and hilly pathway from the alternative watering places of Tinaja Anita and Arroyo Carrizal;[1] and the huts crowning the great shell-heap of Punta Antigualla—one of the most striking records of immemorial occupancy in America—are nearly or quite 10 miles by trail from Pozo Escalante, and still further from Aguaje Parilla, the nearest sources of potable water. These are but typical instances; and while there are ruined huts (evidently regarded as temporales) near the dead waters of Barranca Salina and Pozo Escalante, they tell the tribal policy of locating habitations in places surprisingly remote from running water. Like other desert folk, the Seri have learned to economize in water-carrying by swigging incredible quantities on their occasional visits to the aguajes; it is probable, too, that their systems are inured, somewhat as are those of [271] the desert animals that survive deprivation of water for days or months, to prolonged abstinence from liquid food; yet it seems safe to assume that at least half of the water required in their vital economy (say 2 or 3 pounds apiece daily, on an average) is consumed after transportation over distances ordinarily ranging from 4 to 12 miles. Under these conditions the Seri have naturally produced a highly developed water industry; they are essentially and primarily water-carriers, and all their other industries are subordinated to this function.

147 312

415 Concordantly with their customs, the Seri have a highly differentiated aquarian device in the form of a distinctive type of olla, which is remarkable for the thinness and fragility of the ware, i. e., for largeness of capacity in proportion to weight. Representative specimens are illustrated in plates XXXII and XXXIII (the former painted, as already described). The dimensions of the two vessels are as follows: painted olla, height 34 cm. (13½ inches), mean diameter 32.5 cm. (12¾ inches); plain olla, height 32 cm. (12½ inches), mean diameter 33 cm. In both specimens the walls are slightly thickened at the brim, those of the painted vessel measuring about 4 mm. and those of the plain vessel about 4.5 to 5 mm. in thickness. Below the brim the walls are thinned to about 3 mm., as is shown in the fractured neck of the painted specimen. The capacity of these Seri vessels in proportion to their weight, compared with that of typical examples of ware produced by other desert peoples, is shown in the accompanying table.

171 415 Comparison of the mean ratios indicates that the Seri ware is almost exactly twice as economical as that of the Pueblos—i. e., that its capacity is twice as great in proportion to the weight of the vessel; and that

[122] [1] The preciousness of water in this hard province was impressed in the 1895 expedition, during which the cost of the commodity, reckoned on the basis of the time and labor involved in obtaining it, was estimated at $10 or $12 per gallon, or about the wholesale price of the finest champagnes.

105 groups or clans between the waterholes and
182 their temporary dwellings by the sea, chasing for game or searching for cactus fruits, sleeping wherever weariness overtook them, or where the successful end of a hunt left them gorged and drowsy. Under a climate where frost is almost unknown they needed no protection except from the sun, and built no other dwellings than their brush-heap jacals (Fig. 3). Living in animal-like savagery, without commerce or industry, the Seri's every bodily character and function were directed toward the provision, day by day, of the food and water necessary for life.

312 Potable water, a commodity so abundant in most regions as to divert conscious attention from its paramount role in physiologic function and in industrial economy, attained in Seriland the primary place of importance because of its rarity. In that arid land it is scanty to the extreme. Two thirds of the meager supply is confined to a single rivulet in the interior of Tiburon Island (Fig. 4). Because of this and other widely separated aguajes within the island whose shores provided the greater part of their food resources, the Seris early found this island the most tolerable habitat in their desolate realm.

225 The most conspicuous single article in the
[262] dietary of the Seri, and undoubtedly that which first determined the location of his habitat, is the green sea turtle which is abundant throughout the Gulf of California, but particularly so in the narrow channel between Tiburon Island and the mainland. There the shallow lagoons abound with its marine grass food plant, and the sandy beaches provide optimum conditions for egg laying and hatching. In consequence of this natural provision for abundant food, easily obtained, perhaps half the aggregate life of the Seri tribe came to be spent within easy reach of the feeding and breeding grounds of the turtle.

[361] The most extensive and permanent of all Seri communities was established on the channel side of the island, just back of the lagoon in which the turtles feed and whose sands provided eggs and the succulent flesh
225 of newly-hatched turtle young. When fe-
501 males could not be captured at the laying grounds, the big chelonians were speared

[p. 194(B)]

[text continues on p 195(B)]

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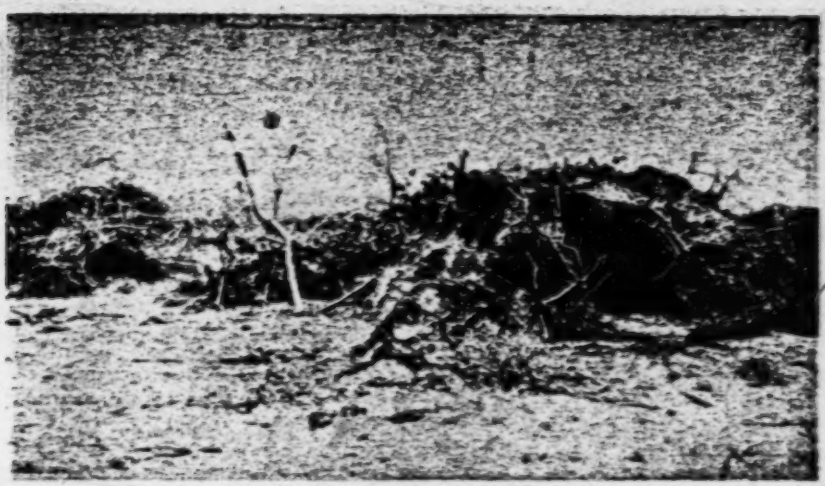

FIG. 3. THE SERI HOME—A BOWER OF BRUSH

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FIG. 4. AN AGUAJE ON TIBURON ISLAND
THE PRINCIPAL WATER SUPPLY AND SOURCE OF THE CARRIZO REED USED IN CONSTRUCTING THE BALSA.

[p. 195]

614 hundred Seris at a time. They lived in maternal groups or clans in which the elder females were of great prominence in the management of everyday affairs. When, in 342 the wanderings of a family a new camp was [462] decided upon, the elder matron usually erected the jacal alone, without the aid of men or boys, gathering the long poles of the ocotillo or the branches of desert trees and fashioning them into an arched framework over which a covering of brush, and often later of turtle shells, served to give protection from the desert sun. After the house- 361 hold was prepared, she took her place within 592 easy reach of the meager and squalid family possessions, and around this nucleus other matrons and their children gathered in the course of a day or two. It was usually three or four days, and sometimes a week, before the brothers and husbands came wandering in from their roving search for food to take their places at the new camp site.

482 From the turtle fishing camps on the chan- 312 nel, the nearest fresh water was at a distance

[p.196(A)]

312 482 of four miles by a rough and stony trail. In other parts of the island, habitations were occupied as distant as 15 miles from the nearest watering places. Under these conditions the Seris became essentially and primarily water carriers, and all their other industries were subordinated to this function. [271] They learned to economize on water carrying by gulping incredible quantities on their occasional visits to the aguajes, yet, more than half of the water required in their vital economy was consumed after transportation over distances of four to twelve miles. The 312 women were ordinarily the water bearers and for this important business manufactured a 482 distinctive vessel for the purpose. From fine 323 adobe clay they hollowed, expanded and shaped by manipulation with the fingers and without the aid of implements of any sort, a large olla of remarkably light weight in proportion to its capacity. Its mouth was made no larger than the hand that shaped it, thus to prevent spilling on the trail. From 482 yucca fiber a cylindrical cushion was also

[p. 196(B)]

[text continues on p. 197(B)]

283 302 from coarse, wiry grass stems, and saved all the brushings to be used in the making of strong threads and cords.

147 481 The fleetness of foot and remarkable physical endurance of these people attest to the rigorous and difficult life in Seriland where the ability of an individual to survive a season of want depended upon the reserve energy of his own body by which he could carry himself long distances in search of food and yet have strength to return to a waterhole, left miles behind. The slender, sinewy limbs and capacious chests of the Seris, in whom no trace of obesity has ever been observed, show clearly the result of untold centuries of selection of the strong by the severity of the environment, where water, too heavy for transport, too difficult of storage, is yet always within reach of an organism strong enough to journey ten, twenty, or even fifty miles in search of it. [312]

224 Perhaps the most severe physical exercise practiced by the Seris was the chase of animal game, particularly since it was often resorted to only after a period of weakening hunger which prompted the all-out effort to obtain adequate food supply. Days of wandering over the deserts in search of vegetable food were sometimes unrewarded, and although rabbits were to be had for the chase, they were too small to be of much consequence in the feeding of a family. The deer were fairly plentiful and provided excellently for a lasting feast.

The deer hunt was conducted by several tribesmen without weapons. When an animal was sighted it was followed by one and circled by others of the party, chased until frantic and exhausted, whereupon one of the men rushed upon it, threw it to the ground and caved in its skull with a stone.

The most avidly sought prey in the Seri chase were the helpless young and heavily pregnant does which were pursued and rent to fragments with a horrible fury, particularly with intent upon the succulent tidbits afforded by the fetal flesh.

222 A time of ease and plenty came each summer, for usually in late May or June the cactus plants with which Seriland abounds begin to mature their fruits. In the foothills of Sierra Seri on the mainland, great

3:Davis & Dawson E-5 (1922-1940) 1945
NU31 Seri NU31

[342]
[415]
[732]

FIG. 17. SERI BLIND MAN
BEING LED BY A BOY. NOTE THE CRUDE SHELTER OF POLES AND BRUSH SERVING AS AN AIRY DWELLING.

231 destitute of nourishment, tough and strong as rawhide; but hope springs eternal in an Indian dog's stomach, and again and again he will search out and mouth the same old pelican bone or fish head, discouraged never. The dogs, beside keeping the camp clean, lick all the cooking utensils when they are not tended, and also are allowed to lick clean the infants after they have performed their natural defecations. A Seri girl was seen placing a small can of water for a dog to drink from, [312] afterward drinking some of the remainder herself and then pouring the rest back into the family five-gallon can.

732 Although the conditions of existence for the Seris had from time immemorial been too precarious to permit of anyone living who 734 was unable by physical disability to hunt or fish to get his meat, there were two or three men, blind or nearly so, whose wives got an uncertain living for them by the hardest struggle (Fig. 17). If a Seri, however, became ill of a disease which the tribe feared, he was often taken into the desert and left with a little food and water, either to get well and return or to perish.

[P. 265(A)]

5:Dawson N-5 (1940) 1944 NU31 Seri NU31

of nutritious material which was ground to powder on their stone ahsts, winnowed in shallow baskets and made into a meal or paste.

The abundant cacti of many species served several other functions in the domestic economy of the Seris. The thorny cholla whose insipid fruits were not fit to eat and whose spines were a constant threat to the unprotected bodies of the Seris, found one use, nevertheless, in the burial procedure. After a body was partly covered with earth in the three foot deep grave, it was densely overlaid with chollas before leveling, to discourage the coyotes from digging for the body.

The dry skeletons of the giant cacti provided the long, cylindrical poles used in knocking off ripe pitahayas as well as in all other instances in which a straight, slender pole was needed. Since the advent of the open boat in modern times, the cactus skeleton has come in for a new use, for after trituration between stone ahst and hupf, it was found to yield a satisfactory caulking compound when mixed with sea-lion oil.

The barrel cacti, *Feroçactus Wislizenii* and *F. Coulteri*, though ordinarily abundant on the Sonoran desert are rare in Seriland and practically absent from Isla Tiburon where they may easily have been exterminated by the improvident Seris during their centuries of occupancy on account of their recognized value as water providers on the wastelands over which the Seris so frequently ventured.

These Indians found housing no problem, for, living under a climate in which frost is rare and rain infrequent, they found little need for shelters except for protection against the blazing desert sun. Camps that were occupied for more than a day or two, however, usually saw the appearance of a group of crude sun shelters. These were usually made of long, flexible ocotillo branches, *Fouquieria splendens*, stuck in the sand and fashioned into an arched framework over which a more or less complete covering of brush was piled. If, by the sea, a windbreak were desired, the brush top and siding were usually augmented by the addition of several empty turtle shells.

On the delta plain of the Rio Sonora, the mesquite, *Prosopis juliflora*, grows in remarkable luxuriance, these gnarled, spiny trees forming an almost continuous open forest 20-40 feet high. Its fruit, consisting of small, hard beans borne in slender, woody pods forms a concentrated, starchy food that the Seris found highly nutritious if not appetizing. In late summer when all fresh vegetable food had withered and disappeared, provided the turtle fisheries had not yet attracted them back to their island, they often spent some weeks gathering the beans and grinding them into a meal which was eaten as a watery atole or as a paste mixed with sea-lion oil. The more straggly and thorny cat's claw mesquite, *Acacia Greggii*, and the ironwood, *Olneya tesota*, also yielded woody beans in limited quantity.

In the deeper gorges of the mountains the Seris found *Guaiacum Coulteri* yielding a berry of medicinal properties and also *Jacquinia pungens* which produced a nut, edible when not quite ripe, and forming a favorite rattlebead when dry.

Along sandy washes, particularly on the lower flood plain of the llano grows a low, shrubby weed, *Hymenoclea monogyra*. Although during times of drought it shrinks to stunted tussocks, after periods of heavy rain its flourishing fens produce abundant seeds eaten both by the beasts of the plain and formerly by the Seris.

Before the advent of the tin can and the cardboard carton, basketry was an important handicraft among these Indians

[TEXT CONTINUES ON P. 138--Analyst]

9:Malkin E-5 (1953-1955)1962 NU31 Seri NU31

I

INTRODUCTION

121 localities, but I think it is advisable to include others, whose nature is not so different from the main places of Seris' habitations.

361 13 I have selected then 25 localities and I shall give their main characteristics below:

[491] 1. **Punta Peñasco** — a village along the upper shores of the Gulf of California, close to the U.S., connected by a paved highway from Gila Bend. Typical Sonoran zone with extensive sand flats. Very rarely visited by the Indians.

2. **Porto Libertad** — rocky shores, located some 30 miles north of Desemboque. A Mexican village frequently visited by the Seris.

[172] 3. **Desemboque** — Seris' main settlement after 1940, just north of and around Punto Tepopa, only a few miles from Tiburon. A narrow strip of poor land, thoroughly permeated with alkali and salt. Vegetation is very sparse. The mesquite, elephant bush, creosote bush, *Cholla* and *Sahuaro* are the main trees. No *Palo Verde* or *Palo Fierro*. *Ocotillios*, *Sahuaros* and mesquite are stunted and scarce, only toward the mountains increasing in frequency and size. Along the shores, sand dunes with kitchen middens, partly covered by vegetation. An arroyo nearby is empty except on a few occasions during the year when flash flood after rains rushes through. Rainfall very scarce. During the summer of 1953 I spent there, it rained very little—only twice and that was short and feeble. [312] Water is obtained from a well, near which there is a Mexican ranch where, owing to irrigation, some vegetables are grown and weeds are present such as *Datura*. The coast is largely rocky. Narrow beaches lack wide sand bars. Hence the fauna here is poor.

4. **Estero Sargente** — alkali flats and mud flats some 25 km. south of Desemboque along the coast. Vegetation very scarce. *Sahuaros* and *Ocotillios* and other desert trees grow some distance from the shore. Short grasses in some places clump the coastal dunes. Breeding and feeding place of many shore birds, especially of willets and egrets. On the alkali flats near the shore are many peculiar insects, not found in Desemboque, particularly tiger beetles and Oedemerids.

[103] 5. **Campo Vivora** — little more than half way down toward Desemboque from Estero Sargente, also along the coast. So named after supposedly numerous rattlesnakes. Clumpy grasses. Favorite encampment of the Seris and others while fishing and hunting turtle. The only loggerhead turtle I have seen was right here.

[491] 6. **Porto Kino** — fishing village directly due east of Hermosillo, nowdays connected with Sonora's

[P. I [illegible]

13 17. **San Lorenzo Island** — a narrow long island along the coast of Baja, California, and opposite to Tiburon. Altitude up to 1200 feet. Fauna limited, owing to the distance from the mainland. Vegetation much as elsewhere but impoverished. Visited incidentally as is San Esteban.

18. **Angel de la Guarda** — large island along the coast of the peninsula, longer but narrower than Tiburon, slightly lower at its highest point, pretty much waterless. Vegetation as elsewhere, fauna limited. Visited by the Seris very rarely.

[312]

19. **Desemboque (Mountains)** — high mountains immediately back of Desemboque, 5 miles away, rising perhaps to 1200 feet. Vegetation much richer than in Desemboque, with giant *Sahuaro* growing to considerable size. More moisture than immediately near the sea-shore. Full Sonoran fauna with cougar and bighorn. Frequently visited during hunts.

20. **Tepopa (Mountains)** — in distinction from Punto Tepopa as a whole, this refers only to the rugged head. The mountain reaching to over 1800 feet. Thus by Punto Tepopa are meant only the shores and the littoral.

21. **Buena Vista** — a ranch inland on the way to Hermosillo, newly deserted. Water present in the large well and periodically in the dry river. Willows, large mesquite, Palo Verde, etc. Now only incidentally visited by the Seris but formerly of some importance as a camp site.

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[361]

22. **San Francisco de Costa Rica**—a ranch inland halfway between Kino and Hermosillo near the main road, presently a large Mexican ranch. Formerly a frequent Seri campsite. The distinctive feature of this locality is extensive sandy areas with very peculiar fauna.

[361]

23. **Hermosillo**—capital of Sonora of some 40,000 people. Extensive agriculture, irrigation, river and water-dammed reservoir and cattle and cotton ranges. Once the Seris ranged almost as far as this town but presently they come here only on special business, to the hospital or for a ride to town, with the Mexican truckers. Their observations in Hermosillo are only incidental.

[484]

24. **Nogales**—U.S.-Mexican frontier town. Seris come here very rarely and only certain individuals. Observations less than incidental.

[484]

25. **Campo Utah** — large track of irrigated flat lands given up to cotton, operated by the Utah Construction Company between San Francisco and Hermosillo. Somewhat off the main road. Selected as a distinct region owing to the irrigation and cotton fields with their ecological peculiarities. Seris visit this only in transit or on most unusual occasions when they work a few days for the Mexicans.

[484]
[464]

The Problem

121 The basic problem concerns the state of Seris' zoological knowledge, that is the general knowledge of the natural history of animals in its main outlines; of their ecology, habits, reproduc-

[P28]

825

tant factors in their knowledge. At the one pole we have the kangaroo rat, an animal so abundant that it has been indicated for all 23 localities; at the other extreme is the jaguarundi, as already indicated, little known to them, for which no distributional data is available.

The chart shows at once that the informants thought certain animals completely absent from the islands in the Gulf. Thus the cougar, bighorn, deer, badger and cottontail were indicated as absent in the islands. This indeed is the case with most of these certainly, with the possible exception of the cottontail. Its presence or absence in the islands should be verified, especially in that the informants mention the jackrabbit as present in all three of the Tiburon localities although absent from the remaining islands. A number of other animals had been indicated as being absent from Tiburon. Here belong the peccary, porcupine and the sea lion. In the latter case, what the Seris must have in mind is the absence of the rookeries and "permanent settlements" of the sea lions. Individual specimens undoubtedly do show up on the Tiburon coast.

In several instances, the Seris indicated reasons for the presence or absence of a given animal in a locality, usually in the form of comments concerning the ecological features and preferences of the species. In several cases, it may be seen at once how the particular locality is related to the essential habitat features. The cougar and the bighorn are both found in the mountainous, craggy areas, hence the Seris cited Desemboque mountains and Buena Vista for the cougar, and the "big mountains" near Porto Kino, Punto Tepopa and Desemboque mountains for the bighorn. And likewise, all of the localities indicated for the sea lion are those that have rocky beaches.[1]

Local preferences within the sea were indicated also for all three of the marine *Cetacea*. This took the form of a blanket statement that they prefer deeper waters and for the grey whale also preference for more distant waters of the area, those surrounding the islands of San Lorenzo and Angel de la Guarda.

b) Seasonal

Although the mammals are less subject to the seasonal restrictions than other animals, the Seris have observed certain seasonality, at least for some of the species. Information is available for 12 species of mammals and in that number for six no differences in the seasonal occurance are known to the Seris, while preference for the cold or hot season has been indicated for three species each. Preference for the cold or hot season has been usually connected with the migratory habits. This has been indicated especially for the killer

[1] The coyotes, the informants thought, were more numerous on Tiburon and especially at Tecomate than on the mainland. This may be owing to the fact that these animals are intensively hunted by the Mexicans and the Americans on the mainland and near Desemboque because of the danger they represent to the domestic stock. As for Tecomate—there is a long standing Seri encampment there and a water hole—which two factors may attract the coyotes.

[361]
[312]

[P. 14A]

000 possible for producing domestic crops of any kind. There is no water
312 for irrigation, and drinking water is very scarce, rising in only a few parts of the Island in places known only to the Indians.

648 For centuries these nomads of the wastes have borne an evil repu-
[101] tation as killers and cannibals, and many an expedition to the Island for trade or exploration has never left its beautiful shores. Lured away from their boats by friendly gestures of the Indians, every last man has been killed by arrow or rifle and the expedition never heard from. No survivor has ever returned to relate his experience and, up to the time of my visit, a man risked his life to go among the Seris on their Island.

Time after time, for four hundred years, the Spaniards, and later the Mexicans, have tried to exterminate them. They have been ambushed, hunted, killed on sight for years; diseases have decimated them: they have been the Ishmaelites among the native tribes of Mexico, with every man's hand against them. Now only a small remnant survives.

[13] They have also taken heavy toll of those who have invaded their territory, which at one time extended from Altar on the north to Guaymas on the south, and from Hermosillo to the coast. When hard pressed, they retired to their Island sanctuary where, deep in the rugged ranges, they have defied pursuit. They are strong, brave, neither asking nor giving quarter in battle---men of marvelous endurance, tireless walkers, swift runners, wonderful trackers.

Within the last few years the Government has definitely set aside Tiburon as their exclusive home and sanctuary, with a strip along the mainland as their hunting and fishing ground, and where they can harvest the fruits of the giant cacti without fear of being killed. No person is allowed on this Island without special permission from the Governor of Sonora, or their Superintendent and devoted friend, Roberto Thomson. The Government has declared a permanent closed season on Seris.

175 As to the reputation of these nomads of the wastes of being can-
648 nibals, I quote the following extract from the *Life of Bill Fain:*

266 After I had been in Yuma some time, a Yuma school teacher asked what I knew about Tiburon Island and the Seris. He said he had heard there was gold on the Island and he in company with a sailor intended to go down there. I said "Partner, I have been at the head of the Gulf several times, and interviewed many Mexican sailors and fishermen. These Seris are murderers and cannibals and my advice is, don't go, for as sure as God made little apples, you and your friend will make a fine feast for the *Tiburones.*"

He said the sailor would manage the boat and they would prospect on the Island and pack the gold out. And besides, they were going unarmed and trust themselves to the tender mercies of the most treacherous Indians in North America. I told him, "My advice is to stay just as far away from that Island as you can, if you want to teach school any longer." My advice was thrown away.

Some weeks later several mining men in skirting the coast opposite Tiburon, came across a place where the Seris had evidently been feasting on human flesh,

123 rancheria of about ten or fifteen huts, half tumbled down, all facing
361 the sea and surrounded by turtle shells and deer bones, and sea shells. Things were dropped wherever they ate. This rancheria was deserted also.

We set sail again and landed on a sandy beach near another deserted rancheria called *Palo Fierro*. We hauled the boat way up and took out all our things and carried them up to the huts. In this place there were twenty-one huts---sometimes three built together. Many of them were in a good state of preservation. They were all in a long row with bleaching bones and turtle shells on all sides. From the inside of one hut I counted thirteen turtle shells around the base. There must have been about a hundred turtle shells here, and a few land tortoises.

123 There were two or three fragments of painted parts of a boat---
[648] probably remains of a boat belonging to seven fishermen who got drunk and landed here, and were all killed by the Seris two years ago. Six months ago a single Seri was captured by some Mexican fishermen and killed in reprisal.

As the wind increased it kicked up an ugly sea and we decided to camp over night. As we were reduced to about six gallons of water, Roberto suggested we take two empty five-gallon cans and go for water. I had offered to stay with the boat but was told the Seris would kill me if they found me alone.

[312] A Seri had told Roberto to follow a certain trail from the rancheria and go between the mountains and he would find a *pozo*, or well, not far away. Ricardo left his private sign and the five of us marched away, following a well-worn trail. For the full distance broken shards of ollas lined the trail at short distances, so we knew we were on
137 the right trail. Brush began at the sea shore and we passed various
123 kinds of desert vegetation---several kinds of cactus, especially the *zarbueso*. This starts with a single great trunk two or three feet in diameter, and then branches out like a vase, running up fifteen to twenty or more great columns like the *saguaro*. They were thirty or forty feet high. In some of these were piled a great accumulation of sticks and trash ten feet high or more, and on the top where the sea eagle makes its nest. There were a number of these.

Then we came to the *pitahalla*, *cholla*, *ocotillo*, and others, and the strange *terote* tree. This tree is the *Bursura Microphylla*, and has an odor like turpentine. It is a fat, dropsical tree like stuffed sausage, with crooked ungainly branches coming out at all angles. There are three varieties---the *terote colorado*, *blanco*, and *negro*, according to the color of the cut bark. Another strange tree was the *palo blanco*. Then there was the *palo verde*, *palo fierro* and *mesquite*. The *mesquite* was rare.

123 A number of signs were marked in the sand. We could not translate
[212] them. We walked single file, rifles in hand, and revolvers handy.

[text continues on p. 155]

10: Davis E-5 (1922-ca. 1939) 1965 NU31 Seri NU31

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Alverto Mendoza and Lupe Astorga getting water from cactus - used for cooking

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Child leading Petra - blind woman, Kino Bay - 1936

123 Mile after mile. We got very dry and had almost given up finding the [133] water. We had gone up a sandy wash for miles, barren arid mountains terminating in regular saw tooth pinnacles on all sides, some of beautiful red rock---red as blood; some gray and some lavender.

• 312 123 At last we came to the water hole which had also been frequented by coyotes, skunks and other animals, and their flavor was easy to taste. But we had ceased to be critical long ago. The hole was really a crooked shaft and led down crude steps worn into the rock for ten or twelve feet. It had been dug by clam shells and bones and sticks, and may have dated back many years. Part of it was through rock and it was a work of great patience to dig with such primitive tools.

123 At the foot, a seepage came through the sand and formed a shallow pool from which, in the semi-darkness, we dipped water and filled our cans. After a rest, all partook of a generous drink. It took us two and a quarter hours---six miles to go there, and we were probably the only white men who had ever been there. I am glad I went for the experience, but we were all completely exhausted on reaching camp. Ricardo and the Mexican carried the cans of water six miles on a stick balanced over the shoulder. Roberto left his sign along the trail. We slept in the Seri huts, all tired out. My feet were tender from walking on the sharp shells and my shoes had shrunk from being wet in salt water, and that pained my feet greatly by cramping them too much.

We heard many interesting tales about the Seris: their wonderful endurance, their susceptibility to disease, their marvelous feats of tracking and swimming, their habit of getting food only when necessary and laying up none ahead, and other queer customs.

The breaking of dawn brought a marvelously beautiful sunrise. It was very low tide and the boat was stranded nearly two hundred feet from water. The sky and sea were crimson and the mountains purple on the Sonora side. The sea was calm, without a ripple, and mirrored every peak and color and made a picture of indescribable beauty.

We ate a hasty breakfast and strained ourselves to the utmost to move the boat. It slowly slid over the grass and shells to the water's edge, and then we had to push it out seventy-five feet in the water to get it deep enough to float. A slight breeze was blowing, so we raised the sail and rounded the point and headed across for another point, across a stretch of water five or six miles.

[202] At last we saw a few huts and as we neared shore we saw two men with rifles. We waved the white banner, laid our rifles handy, fixed our revolvers, and ran the boat ashore. The men had darted back into the brush as experience had told them to beware of strangers. Roberto and his brother Nene leaped out, leaving their rifles, seized the white flag, ran after the men and called to them and said they were friends who had come to see them. They recognized Roberto, returned to the brush shelters, left their rifles and came to the boat bare-

[text continues on p. 157]

123 handed to show their friendliness.

142 One was a young man with rather pleasant features, his braided
291 hair hanging below his shoulders. His name was Antonio Herrera. The
123 other was a wild-looking specimen called Ramon Blanco. His hair was a
[302] tangled mat with a short braid behind, suspicious black piercing eyes,
long sparse moustache and chin-beard hiding a broad cruel mouth. He
[411] wore the remnants of an old sweater, a short dirty kilt, or skirt,
nearly to his knees, a belt full of cartridges, mostly empty, and a
long knife in a rawhide scabbard.

123 The young man had been baptized and given a name by Roberto, who
[795] had acted as godfather or *patrona*, many years ago. He wore a hat,
[291] jacket, and pants of blue denim, and *guaraches*, or sandals of rawhide.

We shook hands all around and then they called and halloed in the
brush and soon three women and a lot of children, wild and half-
[415] clothed, filed into camp. The women were tall, gaunt, unkempt, ragged
[482] and barefooted, paying us not the slightest notice. They were bearing
[422] on their heads large baskets filled with all their earthly posses-
[854] sions---cooking ollas, scraps of cloth, pieces of turtle meat, bone
[231] brads, hair brushes, and odds and ends. They carried, also, an infant
or two wrapped in odd bits of rags. Several gaunt dogs followed in
their wake.

342 In all, three families came trailing in, removed their household
equipment from their heads and resumed their interrupted and primitive
[512] housekeeping. Each family occupied its apartment in the row of brush
shelters, separated from each other only by brush partitions with a
total lack of privacy. These shelters, always open to the sea, serve
as shade from the fierce rays of the sun, and also as windbreaks, but
[361] are no protection from infrequent rains. They are occupied only for a
brief period and then their nomadic tenants move on to fresh *cahuama*,
or sea turtle range.

123 Soon, a third man arrived while we were near the huts, Manuel
[142] Encina. He was a man of sixty-five, gray hair and mustache, seamed
features, and not evil looking. He was out of breath. He had gone for
water to the same water hole where we had been yesterday, struck our
tracks, had left his water cans and hurried back to warn his people.
He was greatly relieved to find friends.

Since he had gone for water, inquiry revealed there had been no
water in camp for two days, and six adults and one girl of thirteen
and six children were thirsty. We gladly gave them one of our five-
[225] gallon cans of water and they were very grateful. They had caught a
[262] sea turtle the day before and gave us some turtle steaks which looked
like beef or mutton.

312 As the camp was without water and we were running short, the young
482 man and Encina offered to get some. Each took a *palanca*, or short
123 shoulder pole with knotched ends, fitted empty five-gallon cans in

123 312 [482] nets of twisted fiber, hooked the nets in the ends of the notched stick and started off nine or ten miles to the water hole in the heart of the mountains.

Water carried so far over loose, sandy soil, dodging cactus, threading a devious way among the *talus* thrown off the cliffs and slopes of canyon walls, with the water-bearer barefoot, acquires a value absolutely unknown to the man who draws an unlimited supply from a faucet.

The two men were gone six hours and when they returned they were almost staggering under the heavy loads of water, each man carrying at least one hundred and ten pounds of water, as the cans were full. In addition, one man had a canteen full.

The thirsty people drank sparingly, and a little Seri maid poured some of the precious liquid into a cooking olla for a thirsty dog. After the dog had lapped sufficient to allay his thirst, she carefully poured the residue back into the can, never losing a drop. One drop of water could not be spared after that arduous trip.

484 147 648 Bob says a man goes to Hermosillo occasionally and returns to the coast, ninety miles, with two to five cans of *mescal*. It takes probably four days to do it, but it is a wonderful feat of endurance. He said about thirty years ago a woman walked the ninety miles during one night, afoot, and reported to the Government House when it was opened at nine in the morning that about fifty of her people had been shot by Roberto's uncle at various times. This uncle was a very hard rough man and the Seris were fond of his mares and steers for meat, and used to steal, so he began shooting a goodly number. Fearing a man messenger would be shot, as men were frequently shot while going along the road, they sent a woman.

Ysabel was Governor at the time. Judgment was rendered against the uncle, and it is probable that a hanging squad would have been sent out to execute him. The Governor, a great friend of the family, sent for him, and he rode ninety miles at night on horseback and was saved with the Governor's help.

Roberto saw twelve Seris pack meat from two mares, two steers and two yearling heifers, for four or five miles to their boats. Their endurance and strength is phenomenal. The question naturally arises, "Why are not burros used by the Seris on the Island to ride and pack, as they are by their Mexican neighbors on the mainland?" It has been [492] tried, but things were reversed; the Seris packed the burros around in their stomachs.

261 262 Roberto said: "These people, living on the verge of starvation, never having a continuous food supply, would kill and eat every burro, and it is a common thing on the mainland, if a cow or horse dies, and Seris are in the neighborhood, they will try to beat the buzzards to it. They will gorge in times of plenty, and when food is scarce they

[text continues on p. 160]

123 the same as do children and dogs, even though it may be hauled for
[132] six or eight miles on mule-back.
[137]

With gifts and hand-shaking all around, we bade goodbye to Lupe and the children and started on our way.

After leaving San Carlos we travelled through a cholla and giant cactus country until we reached Roberto's ranch at Santa Cruz. We had picked up Pancho Oliverria at San Carlos.

Just before leaving the ranch several men lifted a poor woe-begone mare to her feet. She was so poor and weak she could not get up by herself, but once up she managed to stand and finally staggered out into the *mesquital*, the place of mesquite. One eye was missing and watery matter was oozing out and running down her cheek. A night or two before, a lion caught and destroyed her colt, and probably in an effort to protect it the mare came too near the scene and the lion tore out her eye with one sweep of its paw.

Midway to Santa Cruz we stopped a moment at Blevens ranch *Costa Rica*. Blevens is a large, florid white-haired American who has lived in this country for fifteen or twenty years and hasn't much use for the Seris as they have killed so much of his stock.

[244] At one time he noticed a dead cow which was all swelled up and badly spoiled. No white man could stand the smell. He told some Seris about it, and they flocked around it, and when they had finished all that was left were the hoofs and horns.

Nene's wife cooked dinner for us at their house which was composed of *carrizos* and mud roofed with earth, all supported by mesquite logs. Surrounding it was a hog tight mesquite fence, and in this corral was a fifty-foot deep well which furnished the water supply. Half a bull's hide laced on to an iron hoop and holding about fifteen or twenty gallons, was the water bucket. This was hauled up by a long rawhide rope passing through an over-head block drawn by a mule.

After leaving Santa Cruz with none added to our crew, we wended our way through a maze of mesquite, cottonwood and other timber, gradually working out of the timber to more open country where traveling was not so strenuous. The steering gear was worn so that the old truck would often head for a saguaro or mesquite and stop just short of being smashed.

At last we reached a region of flat baked lake-beds, covered in flood times. Sometimes we could travel fast at fifteen miles and then again we would go in the low where it was soft. About three miles from our destination we took off half our load and piled it to one side and jogged along through a wild desert country with no roads or trails, through chollas, desert brush and terote trees.

123 When we neared a hill of dark volcanic rock a number of Seri In-
312 dians darted out, and with their help we reached a camp near the coast
341 where Roberto had recently located a small well of sweet water.

123 Clustered near this well were brush windbreaks joined together, divided
[361] by brush partitions all open on one side. Here were gathered several
• [342] Seri families. There was no such thing as privacy or seclusion.
[342]

As soon as we stopped and unloaded we were immediately surrounded by a curious, half-starved mob of forty men, women and children, about fifteen to twenty children. All dirty, all ragged, all hungry. Some of them I recognized: others were new to me.

While preparing and eating our supper this motley crowd formed a circle about us and hungrily watched every mouthful. We gave them a little food and an orange all around, and they finally left. By that time we had also finished our bread and coffee and followed to the brush shelters.

535 A dance was immediately started. A place was hollowed in the sand,
123 a few short planks placed over it, and the dance was on. Music was
[523] furnished by men tapping on an inverted basket and chanting. Only one man danced at a time. Sand was thrown over the planks and the Indian danced a shuffle, scraping his bare feet on the boards. He held a staff in his right hand and danced to a song called in Spanish *El*
[371] *Toro*. Later on other dancers performed, then gave us the *venado* (deer) dance, taught them by the Yaquis.

This dancer represents a timid deer, hopping up and down to the time of a rattle held in the right hand, and the chanting of the singers. The *venado* dancers stooped over frequently, turning first to one side and then the other to look behind. Manuel Encina was the *venado* and Chico Romero, a very large young Seri, acted the part of a coyote, crawling and jumping on all fours and barking and every once in a while biting the calf or thigh of the *venado*, then jumping back and barking. It was acted with great realism, and the onlookers, especially the children, enjoyed it immensely.

A wilder, more barbaric scene was probably seldom witnessed in America than this gathering of Seris on the shores of the Gulf of California, dancing the *venado*. The camp fire threw a flickering light over dark fierce faces with low foreheads and frowsy unkempt hair.
[302] One man, Luis Torres, the head "ship carpenter" with a moustache and chin beard, his hair low-down framing his dark face, looked like a savage from the wilds of New Guinea. Another, Santo Blanco, a secondary chief below Juan Tomas, has a straggling moustache curling over cruel projecting lips which rarely smile, while his fierce black eyes peering through his black thatch of hair, have a perpetual scowl. The monotonous sing-song chant accompanied by the soft roar of the surf added an indescribable eeriness and weirdness to the dark night.

123 We soon turned in as it was then eleven o'clock, and we all fell asleep lulled by the waves of the sea.